

IN THE CLAIMS:

1. (Currently Amended): A bone sheet for implantation, the sheet having a top surface, a bottom surface and a plurality of side surfaces extending therebetween, the sheet further comprising an at least partially demineralized field substantially surrounding at least one mineralized region, wherein the at least one mineralized region extends from the top surface to the bottom surface.

2. (Original): The bone sheet according to claim 1 having at least one rib providing localized thickness to the sheet.

3. (Original): The bone sheet according to claim 1, wherein the sheet is formed of cortical bone.

4. (Original): The bone sheet according to claim 3, wherein the sheet comprises a plurality of mineralized regions.

5. (Original): The bone sheet according to claim 4, wherein at least two of the mineralized regions are connected by a strut.

6. (Original): The bone sheet according to claim 3, wherein the at least one mineralized region defines at least one hole in the sheet.

7. (Original): The bone sheet according to claim 6, wherein the at least one hole is configured and dimensioned to receive at least one fastener.

8. (Original): The bone sheet according to claim 3, wherein the sheet has a thickness of between about 0.5 mm and about 3 mm.

9. (Previously Amended): A method of forming a flexible bone sheet comprising:

providing a sheet of cortical bone;  
creating at least one hole in the cortical sheet which is configured and dimensioned to receive a fastener;  
masking the cortical sheet proximate the at least one hole to create a masked region surrounding the at least one hole; and  
applying demineralizing agents to the cortical sheet around the masked region.

10. (Original): The method according to claim 9, wherein a plurality of masking elements are removably attached to the sheet to provide masking proximate the at least one hole.

11. (Original): The method according to claim 9, wherein the masking is provided by at least one of the group consisting of tape, paint, and a coating.

12. (Original): The method according to claim 9, further comprising creating perforations in the sheet that are substantially smaller than the at least one hole.

13. (Original): The method according to claim 9, further comprising cutting a bone section along a spiral path.

14. (Withdrawn): A sheet formed of bone comprising two or more strips of bone each having a bone grain orientation, wherein the bone grain orientation of at least one strip is disposed transverse to the grain orientation of another strip.

15. (Withdrawn): The sheet according to claim 14, wherein the strips are interwoven.

16. (Withdrawn): The sheet according to claim 14, wherein the strips are selected from at least one of the group consisting of mineralized bone, demineralized bone, and partially demineralized bone.

17. (Withdrawn): The sheet according to claim 14, wherein a portion of at least one strip is at least partially demineralized.

18. (Withdrawn): The sheet according to claim 14, wherein the strips are interwoven to form a plurality of generally parallel rows and a plurality of generally parallel columns.

19. (Withdrawn): The sheet according to claim 14, wherein the strips have a width between about 1mm and about 6 mm.

20. (Withdrawn): The sheet according to claim 19, wherein the strips have a thickness of between about 0.5 mm and about 2 mm.

21. (Withdrawn): The sheet according to claim 14, wherein the strips have a width of about 5 mm and a thickness of about 1 mm.

22. (Withdrawn): The sheet according to claim 14, wherein the bone strips are unitary in construction.

23. (Withdrawn): The sheet according to claim 14, wherein at least one strip is formed by braiding two or more bone fibers.

24. (Withdrawn): The sheet according to claim 14, wherein each bone strip has a longitudinal axis and the bone grain orientation is substantially parallel thereto.

25. (Previously presented): A method of forming a flexible bone sheet comprising:

- providing a sheet of cortical bone;
- creating at least one hole in the sheet which is configured and dimensioned to receive a fastener;

- masking the sheet proximate the at least one hole to create a masked region surrounding the at least one hole; and
- applying at least one demineralizing agent to the sheet around the masked region.

26. (Previously presented): The method according to claim 25, wherein the masking at least partly comprises:

- removably attaching a plurality of masking elements to the sheet to provide masking proximate the at least one hole.

27. (Previously presented): The method according to claim 25, further comprising:

- creating perforations in the sheet that are substantially smaller than the at least one hole.

28. (Previously presented): The method according to claim 25, further comprising:

- masking the sheet proximate at least a portion of an edge thereof.

29. (Currently Amended): A bone sheet for implantation, the sheet having a top surface, a bottom surface, and a plurality of side surfaces, the sheet further comprising:

a flexible and at least partially demineralized field extending from the top surface to the bottom surface;

at least one mineralized region extending from the top surface to the bottom surface,  
the at least one mineralized region being that is substantially surrounded by the at least partially demineralized field; and

at least one hole configured and dimensioned to receive at least one fastener.

30. (Previously Presented): The bone sheet according to claim 29, wherein the sheet comprises cortical bone.

31. (Previously Presented): The bone sheet according to claim 29, wherein the at least one mineralized region consists essentially of cortical bone.

32. (Previously Presented): The bone sheet according to claim 29, wherein the at least one hole is defined within the at least one mineralized region.

33. (Previously Amended): The bone sheet according to claim 29, wherein the sheet comprises at least two holes and the mineralized region extends between at least two holes.

34. (Previously Presented): The bone sheet according to claim 29, wherein the mineralized region extends between at least three holes.

35. (Previously Presented): The bone sheet according to claim 29, further comprising an outer edge of the bone sheet, wherein the mineralized region extends to the outer edge.

36. (Previously Presented): A mesh for implantation comprising:  
a perforated cortical bone sheet comprising a plurality of openings;  
at least one mineralized region disposed around at least one of the openings; and  
an at least partially demineralized region disposed around the at least one mineralized region.

37. (Currently Amended): A bone sheet for implantation, the sheet having a top surface, a bottom surface and a plurality of side surfaces, the bone sheet further comprising an at least partially demineralized field and at least one mineralized region having a mineralized top surface, a mineralized bottom surface, and at least one side surface; wherein the at least one mineralized region extends from the top surface to the bottom surface and is substantially surrounded by the at least partially demineralized field ~~substantially surrounds the~~ at along the least one side surface.

38. (Previously Presented): A bone sheet for implantation, the sheet having a top surface, a bottom surface, and a plurality of side surfaces, the sheet further comprising:  
a flexible and at least partially demineralized field;  
at least one mineralized region having a mineralized top surface, a mineralized bottom surface, and at least one mineralized side surface, wherein the mineralized region extends from the top surface to the bottom surface and the mineralized side surface is being substantially surrounded by the at least partially demineralized field; and  
at least one hole configured and dimensioned to receive at least one fastener.